

Amendments to the Claims

The listing of the claims will replace all prior versions, and the listing of the claims in the application:

Listing of the Claims:

1. (currently amended) A spectrophotometer comprising:

a light source including a detection lamp for irradiating light ~~in~~ having a first bright line and a predetermined wavelength region, ~~used for detection~~ and a wavelength check lamp for irradiating light having a second bright line in the predetermined wavelength region ~~used for detection,~~

an optical system for ~~irradiating~~ guiding the light from the light source to a detection position and providing a zero-order light by the detection lamp,

a light detecting section for detecting the light from the light source passing through the detection position,

a spectral element provided on one of an optical path between the light source and the detection position and an optical path between the detection position and the light detecting section,

a spectral element driving mechanism connected to the spectral element for changing an angle of the spectral element, and

a reference position detecting section for detecting a first reference position of the spectral element where one of a zero-order light and a the first bright line of the light from the detection lamp is ejected on the detection position based on electric signals from the light detecting section and the dispersing element driving mechanism, a second reference position of the spectral element where the second bright line of the light from the wavelength check lamp is ejected on the detection position, and a third reference position of the spectral element where as the zero-order light, the detection lamp is ejected on the detection position, said reference position detecting section controlling the light source to turn on only the wavelength check lamp to detect the second reference position when the spectrophotometer is turned on, said reference position detecting section controlling the light source to turn on only the detection lamp to detect the first and third reference positions after the

second reference position is detected.

2. (original) A spectrophotometer according to claim 1, wherein the detection lamp is formed of a D₂ lamp and the wavelength check lamp is formed of a low-pressure mercury lamp.
3. (original) A spectrophotometer according to claim 1, wherein at least one of the detection lamp and the wavelength check lamp is a see-through type, the detection lamp and the wavelength check lamp being disposed on a same optical path.
4. (currently amended) A spectrophotometer according to claim 1, wherein the reference position detecting section controls operations of turning on and off the detection lamp, operations of turning on and off the wavelength check lamp, operations of the spectral element driving mechanism, and operations of the light detecting section such that after the spectrophotometer is turned on, only the wavelength check lamp is turned on to detect a the second reference position ~~of~~ a using the second bright line of the wavelength check lamp, and only the detection lamp is turned on to detect ~~at least one of a~~ the first reference position using the first bright light of the detection lamp and the third reference position ~~of using~~ the zero-order light of the detection lamp ~~and a reference position of the bright line of the detection lamp.~~
5. (new) A spectrophotometer according to claim 1, further comprising a home position sensor electrically connected to the reference position detecting section for checking the angle of the spectral element with reference to a number of steps of the spectral element driving mechanism.
6. (new) A spectrophotometer according to claim 1, further comprising a memory section electrically connected to the reference position detecting section for storing the first, second and third reference positions of the spectral element.

7. (new) A spectrophotometer according to claim 6, wherein said reference position detecting section is operated to compare the first and second reference positions of the spectral element stored in the memory section with calculated first and second reference positions obtained by a relationship between the angle of the spectral element and a frequency of the light determined in advance.

8. (new) A spectrophotometer according to claim 7, wherein said reference position detecting section controls the light source to turn on only the detection lamp to detect the third reference position before turning on the wavelength check lamp when the calculated first and second reference positions are deviated from the first and second reference positions detected in a previous run.